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Special Article - Upgrading household income distribution statistics

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INTRODUCTION

Since 1968-1969, in a dozen household income surveys and as part of five household expenditure surveys, the ABS has been collecting household income statistics to support analysis and research into the level and distribution of household income, as well as the distributional impacts of social and economic policy. Analyses over time are crucial in this area but, to date, research into income distribution and living conditions has been complicated by changes in ABS survey methodologies and estimation procedures from survey cycle to cycle.

This article discusses some of the developments towards a more consistent time series of income distribution data and summarises revisions to ABS income distribution statistics that have already been identified in the work-in-progress.

PLANNED IMPROVEMENTS

To improve the quality of both its historical and its future income distribution statistics to better support analysis and research, the ABS is:

- updating its Framework for Household Income, Consumption, Saving and Wealth (Cat. No. 6549.0) in the light of the work of an international expert group (the "Canberra Group") which developed international standards for household income statistics;

- working collaboratively with the Social Policy Research Centre (SPRC) at the University of New South Wales and with a wider group of researchers to develop an adjusted set of income distribution data that are comparable over time;

- increasing the sample size in ABS income surveys, to be run biennially, to reduce sample error and thereby to improve the usefulness of the data for analysis, particularly for sub populations;

- looking at the feasibility of developing modelled estimates for the years between biennial income surveys to support ongoing analysis of income distribution;

- better integrating the collection of income and wealth measures to provide opportunities to improve income coverage and estimation;

- critically reviewing survey methodology to improve the quality of the resultant statistics from future data collection cycles; and

- extending the analytic approach to describing income distribution by using new measures

and methodologies.

COLLABORATIVE RESEARCH

The ABS is working jointly with the SPRC and with other researchers on a series of analytical reports that will address issues of time series consistency in income distribution statistics. The first stage of this project, which is scheduled for completion by December 2003, will result in a detailed measurement of the effects both of changes in survey methodology and of alternative assumptions being made by researchers when using the data. An adjusted dataset will result that will be made available to analyse changes in the distribution of cash income.

The second stage of the project will extend the conventional cash income measure within the income, consumption and wealth framework to include estimates of employee non-cash income, imputed rent, the value of unpaid domestic work and social wage benefits. Selected aspects of the methodology for analysing the effects of government benefits and taxes on the distribution of income (the so called fiscal incidence study or FIS) will also be examined to identify potential extensions and elaborations, and to feed into development of the next FIS study in 2003-2004.

Stage three of the project will further extend the income measure to include the value of imputed income from the ownership of consumer durables, motor vehicles and other assets. Stage four will provide a comprehensive analysis of household living standards and inequality and the distributional impact of the alternative sources of cash and non-cash income.

IMPROVED SURVEYS

Commencing with the 1994-1995 Survey of Income and Housing Costs (SIHC), survey field procedures were changed from those that had applied in the 1980s. An unintended consequence of these changes was the discontinuation of written advice to relevant households to have on hand, for their income distribution survey interview, all relevant documents (tax returns, pay slips etc) both to simplify and speed up interviews and to improve the accuracy of answers about income values. The use of records to support households in answering interview questions declined, and consequently the quality of responses declined. Commencing with the 2002-2003 SIHC, prior written advice is once again being supplied to all households selected for SIHC interviews so that they can be prepared with the appropriate documentation at interview.

Future methodologies adopted for income distribution surveys and for the income component within household expenditure surveys (HES) will also be harmonised so that income data from both survey vehicles can be compiled into a consistent time series.

The sample size for SIHC is also being increased, commencing with the survey for 2002-2003. The sample size for the annual SIHC conducted from 1994-1995 to 2000-2001 was 7,000 households. A range of users criticised this sample size as being too small either to support detailed analyses of sub population groups or to identify statistically significant movements in income distribution over relatively short periods of time. Within a limited budget for conducting income surveys the ABS agreed, commencing with the 2002-2003 SIHC cycle, to increase the sample size to 11,000 households but to conduct the survey only biennially. This frequency/ quality trade-off was preferred by most analysts to an even larger but less frequent survey.

INCOME AND WEALTH

As part of ABS efforts to expand the range of statistics available to analyse economic wellbeing

and economic inequality, every six years (commencing with 2003-2004) the ABS will measure household wealth. However, rather than collect the information as a stand-alone module, it is intended that the wealth of households will be measured together with the income flows that household assets and liabilities generate. By collecting the information in an integrated set of questions it is expected that the coverage and valuation of both the wealth and income dimensions of economic well-being will be improved. It is anticipated that the integrated module approach will most improve the reporting of investment income which in the current SIHC is significantly under-reported. Once the nature of any identified improvement is assessed, options for both correcting past survey results, and for reducing future under-reporting will be investigated.

ANALYTICAL PRODUCTS

In presenting income and income distribution statistics in future, the ABS will focus more heavily on time series. This focus in output reflects the importance of measuring change, both to evaluate overall progress in improving economic wellbeing and to monitor the impact of policy and other changes on the wellbeing of sub populations.

The focus will also shift to the household as the unit of analysis most appropriate for much of the current domestic and international debate about, and policy response to income inequality and economic disadvantage. Income unit information, which focuses on separate units within households that might be considered to manage their incomes separately, will still be presented as supplementary analysis in publications and other products.

ABS publications will focus more on "equivalised" results for income distribution analysis. Equivalising household incomes takes account of the different needs of households of different size and composition.

The ABS will also examine the possibility of modelling income distribution between the biennial surveys. Modelling could take account of the detailed information available from the monthly population survey about income and employment, as well as information from both the taxation and welfare transfer systems. Such modelling could also include updating wealth distribution estimates between survey years both for use in the wider analysis of economic wellbeing but also as an element in quality-assured income imputation in non-survey years.

REVISIONS: A WORK-IN-PROGRESS ESTIMATION METHODOLOGY

As part of a heightened focus on the time series dimension to income and income distribution analysis, the estimation and benchmarking techniques applied in compiling SIHC results have recently been modified to achieve greater consistency between survey cycles. The results for the four years from 1994-1995 to 1997-1998 have been recompiled on the basis of the changed methodology. The impact on summary income measures across the four years is generally small, as shown in the following table.

RECOMPILED SIHC INCOME(a) ESTIMATES - SELECTED RESULTS

	1994-95	1995-96	1996-97	1997-98
GINI Coefficient				
- original	0.321	0.316	0.309	0.322
- recompiled	0.320	0.315	0.309	0.322

Income of households - top of the 90th percentile over the top of 10th percentile - original - recompiled	3.96 3.92	3.94 3.90	3.85 3.84	3.96 3.96
Mean income - all households - original - recompiled	$758 $753	$781 $776	$814 $814	$839 $837
Mean income - households in second and third deciles - original - recompiled	$386 $386	$402 $403	$426 $427	$427 $427

(a) Equivalised, current, weekly household disposable income.

However, another perspective on the significance of the change in methodology for the period 1994-1995 to 1997-1998 is provided by comparing the coverage achieved in the survey results of cash welfare transfer payments made through the social security system. The following table compares the original and revised coverage ratios. The revised series demonstrates more consistent coverage over time, with variations from year to year generally within the tolerances for sampling error.

RECOMPILED SIHC - COVERAGE OF CASH WELFARE TRANSFERS

	1994-95	1995-96	1996-97	1997-98
SIHC coverage of cash welfare transfers - original % - recompiled %	84.0% 84.8%	82.9% 83.8%	85.9% 84.3%	86.2 85.7%

ANALYSIS OF 1999-2000 SIHC RESULTS

While the methodological revisions discussed above also impact on 1999-2000 mean income and income distribution statistics, closer analysis of those results has indicated a significant quality concern. The coverage of welfare transfers provided by the 1999-2000 SIHC results was initially estimated at 81.2% and has been revised upwards to 82.7% as a result of adopting a uniform estimation methodology. However, this coverage ratio remains significantly below the level achieved in 1997-1998 and well below the average coverage achieved in the previous SIHC surveys. Investigations are underway to ascertain the nature of the undercoverage and its impact on income distribution. If, as expected, the missing income largely relates to payments made predominantly to households in the lowest two income quintiles, it may impact significantly on several of the measures used to assess income inequality.

OTHER REVISIONS TO INCOME DISTRIBUTION

As part of the ongoing analysis of income distribution time series, it has been identified that the 1998-1999 HES income results understate the measurement of welfare income in the two lowest income quintiles (in particular, in relation to veterans' benefits). The imputation for non-response to questions about business income also understates total income. While these issues are still being investigated, it is estimated that the combined impact of the corrections will result in the mean income of the lowest income quintile being revised upwards by about 11%, and that of the second lowest quintile being revised upwards by about 2%.

While Stage one of the ABS/SPRC collaborative project is identifying a range of intended and unintended differences in survey methodology such as those discussed above, the project is also looking at aspects of methodology that have not changed over time but which may be problematic for quality income distribution statistics. Among the issues being investigated are: SIHC estimation of current weekly business income based on the previous financial year's income for start up businesses when start up costs can significantly distort average weekly losses; and the possibility of retrospective cash welfare transfer payments being made which SIHC does not capture.

AVAILABILITY OF REVISED INCOME DISTRIBUTION STATISTICS

Recompiled income distribution statistics for 1994-1995 to 1997-1998 that reflect the revised estimation methodology discussed above will underlie the summary income distribution measures to be published in the relevant essays in the first issue of Measuring Australia's Progress (ABS Cat no. 1370.0) to be published on 4 April 2002. The revised data for 1999-2000, incorporating both the revised methodology and any progress with improving the coverage of cash welfare transfers, will be included as part of the time series presentation of the income distribution series in the 2000-2001 issue of Income Distribution, Australia (ABS Cat no. 6523.0), expected to be released in May 2002.

Revised confidentialised unit record files (CURFs) will be prepared and released for each of the SIHC survey cycles from 1994-1995 to 1997-1998, and for the 1993-1994 and 1998-1999 HES survey cycles, to incorporate the revisions discussed in this article. CURF clients will be contacted about arrangements for obtaining replacement files if they wish. Options for unit record analysis of the revised results of the 1999-2000 SIHC, for which cycle a CURF has not been released, will also be discussed with individual clients.

FURTHER INFORMATION

For further information about ABS plans to upgrade income distribution statistics and about the revisions discussed in this article please contact Leon Pietsch, Director, Living Conditions, on 02 6252 6098 or **leon.pietsch@abs.gov.au**.

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